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ABSTRACT

This study compared scores on the Stanford Achievement Test (SAT) of 50 seventh and eighth grade students receiving instruction in regular classroom settings and 50 seventh and eighth grade students receiving instruction in special education resource room settings. Scores from five test components were examined, including: Total Reading, Total Math, Total Language, Basic Battery, and Complete Battery. Results indicated that scores from seventh to eighth grade tended to remain stable or to increase slightly among resource room students and to decline among regular class students. A significant difference was found between groups on the Total Reading component, with the regular class scores declining and the special class scores remaining stable. The greatest difference in standard deviations occurred between seventh grade regular classroom students and seventh grade resource room students on the Complete Battery. This finding supports the expected homogeneity of grouping among resource room students. The paper concludes that placement criteria for the resource room setting are effective in grouping students of similar abilities. (JDD)

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ED 370 322

A Comparison of Stanford Achievement Test Results Among Regular Class and Special Education Students

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Abstract

This study was concerned with the comparison of scores on the eighth edition of the Stanford Achievement Test (SAT) between students enrolled in regular classroom settings versus students enrolled in special education resource room settings. Is there a significant difference in scores between students placed in different instructional settings? This question was addressed by examining the scores on the SAT of 25 seventh grade students receiving instruction in the regular classroom setting, 25 seventh grade students receiving instruction in the special education resource room setting, 25 eighth grade students receiving instruction in the regular classroom setting, and 25 eighth grade students receiving instruction in the special education resource room setting. Scores from five components of the SAT were examined. These components were: Total Reading, Total Math, Total Language, Basic Battery, and Complete Battery. Results indicated that scores from seventh to eighth grade tended to remain stable or to increase slightly among the resource room students, and to decline among regular class students. A significant difference was found between groups on the Total Reading component with the regular class scores declining to a significant degree, and the special class scores remaining stable.

A COMPARISON OF STANFORD ACHIEVEMENT TEST RESULTS AMONG REGULAR CLASS AND SPECIAL EDUCATION STUDENTS

According to Salvia and Ysseldyke (1991), achievement tests are among the most frequently used tests in educational settings. Achievement tests which purport to measure multiple skills such as the Stanford Achievement Test (SAT) (Gardner, Rudman, Karlsen, & Merwin, 1989) and the Metropolitan Achievement Test (MAT) (Prescott, Balow, Hogan, & Farr, 1987) evaluate knowledge and understanding in several curricular areas; for example in reading and math. These tests are typically intended to assess the extent to which a student has profited from the educational process compared to other students of the same age and/or grade level.

Measures of achievement are used most often to screen students in an effort to identify those who demonstrate skills at low levels, average levels, or high levels as compared to their peers. These tests can provide a somewhat global estimate of a student's academic skill development and may be extremely useful in the identification of individual students for whom some type of intervention programming is desirable. This intervention often takes the form of remedial programs or placement into a special education classroom. The assessment of achievement is extremely important in making appropriate educational decisions.

Evaluation in this area of instructional placement is necessary as both a legal requirement in documenting that an educational need exists, and to assist in making eligibility decisions in special education due process.

Achievement tests can be categorized in several ways, with perhaps the most important being their specificity and density of content. Those achievement tests which are diagnostic in their intent usually have a more dense content; containing more items to assess specific skills and concepts and allowing finer analyses of the results. This content density permits the user to pinpoint specific strengths and weaknesses of the student in the areas of academic development. Achievement tests which are primarily screening devices have fewer items per skill area and allow some comparison among students, but lack a sufficient number of items to zero-in on specific strengths and weaknesses. These screening tests, while useful for estimating a student's current level of academic functioning, generally lack sufficient item content to be used for determination of programming.

These tests may also be used for the measurement of progress within the curriculum. Commonly, school districts have some type of periodic testing at various grade levels in order to evaluate the extent to which students in their schools are progressing in comparison with some national standard.

In addition, scores on achievement tests may provide interested parties such as school boards with a somewhat suspect index of the quality of schooling taking place in their educational system.

Finally, achievement tests are sometimes used to evaluate the relative effectiveness of the overall academic curriculum as well as the alternative or remedial curriculum. While there are many variables in curriculum effectiveness, achievement tests can offer some insight into how well the instructional program is working.

The Stanford Achievement Test (SAT) is in its eighth edition and may be used in grades one through nine. The test was first published in 1923; with complete revisions in 1929, 1940, 1953, 1964, 1973, 1982, and 1989. All forms and levels of the test are group administered, and the SAT is both norm-referenced and criterion-referenced in its design.

The SAT measures the following areas: Vocabulary, Reading Comprehension, Word Study Skills, Mathematics Concepts, Mathematics Computation, Mathematics Applications, Spelling, Language, Social Science, Science, and Listening Comprehension. In addition, scoring of the test provides a information on the students performance on the Complete Battery and the Basic Battery. Subtests of the SAT and the number of items in each subtest are listed in Table 1.

Table 1. SAT Subtests and Subtest Items

Subtest	Number of Test Items
Total Reading	94
Vocabulary	40
Reading Comprehension	54
Total Mathematics	118
Concepts of Numbers	34
Computation	44
Applications	40
Total Language	60
Language Mechanics	30
Language Expression	30
Spelling	50
Study Skills	32
Science	50
Social Science	50
Listening	45
Using Information	68
Thinking Skills	118
* Basic Battery	399
Complete Battery	499

*The Basic Battery at all levels includes all subtests except the Science and Social Science subtests.

The purpose of this study was to compare performance on the Eighth Edition of the Stanford Achievement Test (SAT) of middle school and junior high school students enrolled in regular classroom settings, and middle school and junior high school students enrolled in special education resource room settings. Scores from the 1993 spring administration of the SAT were obtained for a sample of 25 regular class students at the seventh grade level, 25 resource room students at the seventh grade level, 25

regular class students at the eighth grade level, and 25 resource room students at the eighth grade level.

Comparisons of standard scores were completed on five components of the SAT using a two by two factorial model. Components of the test which were subjected to this comparison were Total Reading, Total Mathematics, Total Language, Basic Battery total, and Complete Battery total.

Total Reading scores for the study groups indicated that the minimum standard score for seventh grade regular class students was 643.000, the maximum standard score was 787.000, and the mean score for the group was 704.440. Scores on Total Reading among the seventh grade resource students ranged from a minimum standard score of 596.000 to a maximum standard score of 679.000, with a mean standard score of 630.200. Comparison of eighth grade subjects found that for regular class students a minimum standard score of 616.000, a maximum standard score of 733.00, and a mean standard score of 677.400 was obtained on Total Reading. Among resource room subjects on Total Reading, a minimum standard score of 590.000, a maximum standard score of 665.000, and a mean standard score of 629.080 was obtained. Analysis of variance for this component revealed a combined grade/placement difference which was significant at the 0.05 level.

Total Mathematics scores revealed that for the seventh grade regular class students standard scores ranged from a minimum of 656.000 to a maximum of 793, and a mean of 714.560 was determined. Scores among the seventh grade resource room subjects ranged from a minimum of 606.000 to a maximum of 676.000, and a mean of 631.520. Analysis of this data found a grade/placement difference which was not significant.

Examination of Total Language scores for the two groups revealed a standard score range of 635.000 to 726.000 and a mean of 688.680 for the seventh grade students in regular classes; a standard score range of 600.000 to 657.000 and a mean of 623.120 for the resource students. In the eighth grade group, the range of standard scores was 597.000 to 773.000 with a mean of 696.440 for regular class students and a range of 597.000 to 673.000 with a mean of 632.400 for the special class students. Again, there was no significant difference revealed between grade and placement groups.

For the Basic Battery component of the test, it was found that the standard score range for seventh grade regular class students was 651.000 to 731.000 with a mean of 691.880. For the seventh grade resource class students this range was 604.000 to 661.000 with a mean of 627.120. Among eighth grade students in the regular class placement, the range of standard scores was from a minimum of 629.000 to a maximum of 729.000 and a mean of 676.120.

Resource students of this same grade level had a standard score range of 605.000 to 659.000 with a mean score of 627.520. There was no significant difference for this component.

Finally, the Total Battery scores were computed and the results revealed that for seventh grade students in the regular classroom the minimum standard score was 653.000 and the maximum was 961.000. The mean score for this group was found to be 701.040. For resource class students of the same grade level, the range of standard scores was 605.000 to 653.000 with a mean of 628.400. Regular class eighth grade students on the Total Battery Component ranged in standard scores from 633.000 to 727.000 with a mean score of 674.600. Resource students in this same grade scored from 608.000 to 658.000 with a mean of 629.280. For this component of the study the interaction between grade/placement groups was found to be significant at the 0.05 level of confidence.

Table 2. is a compilation of mean standard scores for each grade and placement group.

Table 2. Mean Standard Scores by Grade/Placement

Group	Reading	Math	Language	Basic	Complete
7th Grade Regular	704.44	714.56	688.88	691.88	701.04
7th Grade Resource	630.20	631.52	623.12	627.12	628.40
8th Grade Regular	677.40	696.44	678.00	676.12	674.60
8th Grade Resource	629.08	627.60	632.40	627.52	629.28

As is evident from Table 2. standard scores on the selected subtests of the Stanford Achievement Test declined in each area for regular class students at both grade levels. Among resource room students, scores tended to remain stable or to increase slightly. Appendix A. contains graphic comparisons of scores by grade and placement.

An examination of the variability of scores as indicated by standard deviations revealed that for all grade/placement groups, and for all subtests of the SAT, there was less variability among the resource room students than among the regular classroom students. This would indicate a more homogenous grouping and would be an expected finding since resource room students had been subjected to various required evaluation procedures prior to placement into the special education setting. Standard deviations for each group and subtest is found in Table 3.

Table 3. Standard Deviations by Group and Subtest

Subtest	Group	Standard Deviation
Total Reading	7th Regular Class	33.685
	7th Resource Class	20.795
	8th Regular Class	31.119
	8th Resource Class	18.684
Total Math	7th Regular Class	34.500
	7th Resource Class	18.187
	8th Regular Class	38.592
	8th Resource Class	21.067
Total Language	7th Regular Class	27.236
	7th Resource Class	17.612
	8th Regular Class	40.074
	8th Resource Class	20.085
Basic Battery	7th Regular Class	22.961
	7th Resource Class	14.348
	8th Regular Class	30.187
	8th Resource Class	13.712
Complete Battery	7th Regular Class	58.559
	7th Resource Class	15.930
	8th Regular Class	28.209
	8th Resource Class	13.412

Summary Statements

1. Among the resource room students there was no change in mean reading score from the seventh grade (630.20) to the eighth grade (629.08).

2. Among the regular class students there was a negative change in mean reading scores from the seventh grade (704.44) to the eighth grade (677.40).
3. The lower scores on all subtests of the SAT among resource room students was an expected finding. The effect of placement was clearly evident among all students included in the study.
4. The effect of grade was not so clearly evident in the study as there tended to be a decline in scores among regular class students from grade seven to eight, and a tendency for scores to remain stable from grade seven to eight among resource room students.
5. Greatest variability of scores occurred among seventh grade regular classroom students on the Complete Battery component of the SAT with a standard deviation of 58.559.
6. Least variability of scores occurred among eighth grade resource room students on the Complete Battery component of the SAT with a standard deviation of 13.412.
7. Among seventh grade students in the regular classroom setting the least variability of scores was on the Basic Battery component (sd=22.961).

8. Among seventh grade students in the resource room setting the least variability of scores was also on the Basic Battery with a standard deviation of 14.348.
9. For eighth grade students in the regular classroom setting least variability occurred on the Complete Battery component (sd=28.209.
10. For eighth grade students in the resource room setting least variability of scores was also obtained on the Complete Battery component with a standard deviation of 13.412.
11. The greatest difference in standard deviations between subtests of the SAT occurred between seventh grade regular classroom students (sd=58.559) and seventh grade resource room students (sd=15.930) on the Complete Battery. This finding would support the expected homogeneity of grouping among the resource room students.
12. It appears from the results of this study that the placement criteria for the resource room setting is effective in grouping students of similar abilities.

References

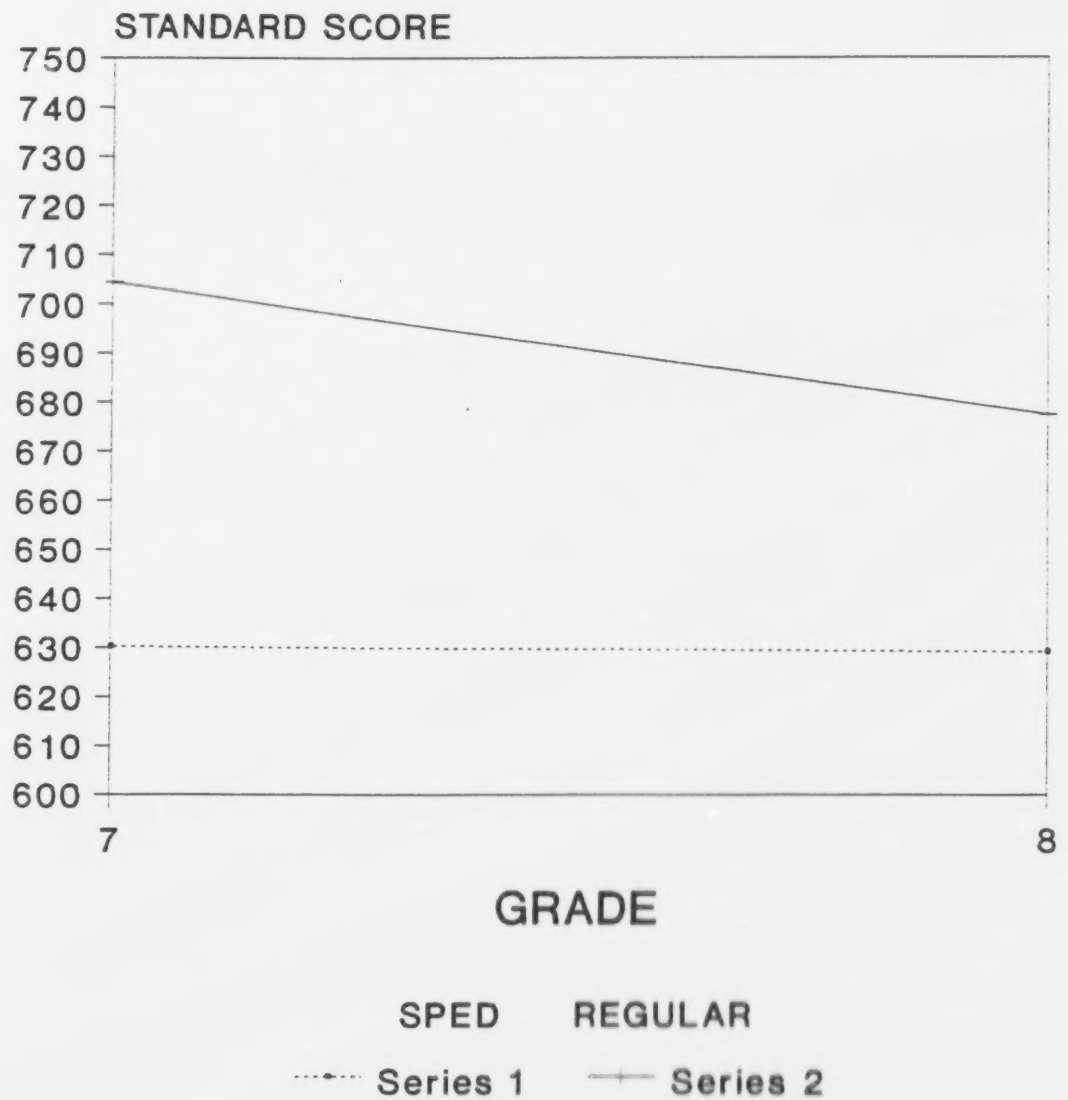
Gardner,E.,Rudman,H.,Karlsen,B.,& Merwin,J. (1989). *Stanford Achievement Test.* New York: Harcourt Brace Jovanovich.

Prescott,G.,Balow,I.,Hogan,T.,& Farr,R. (1987). *Metropolitan Achievement Tests: Survey Battery.* New York: Psychological Corporation.

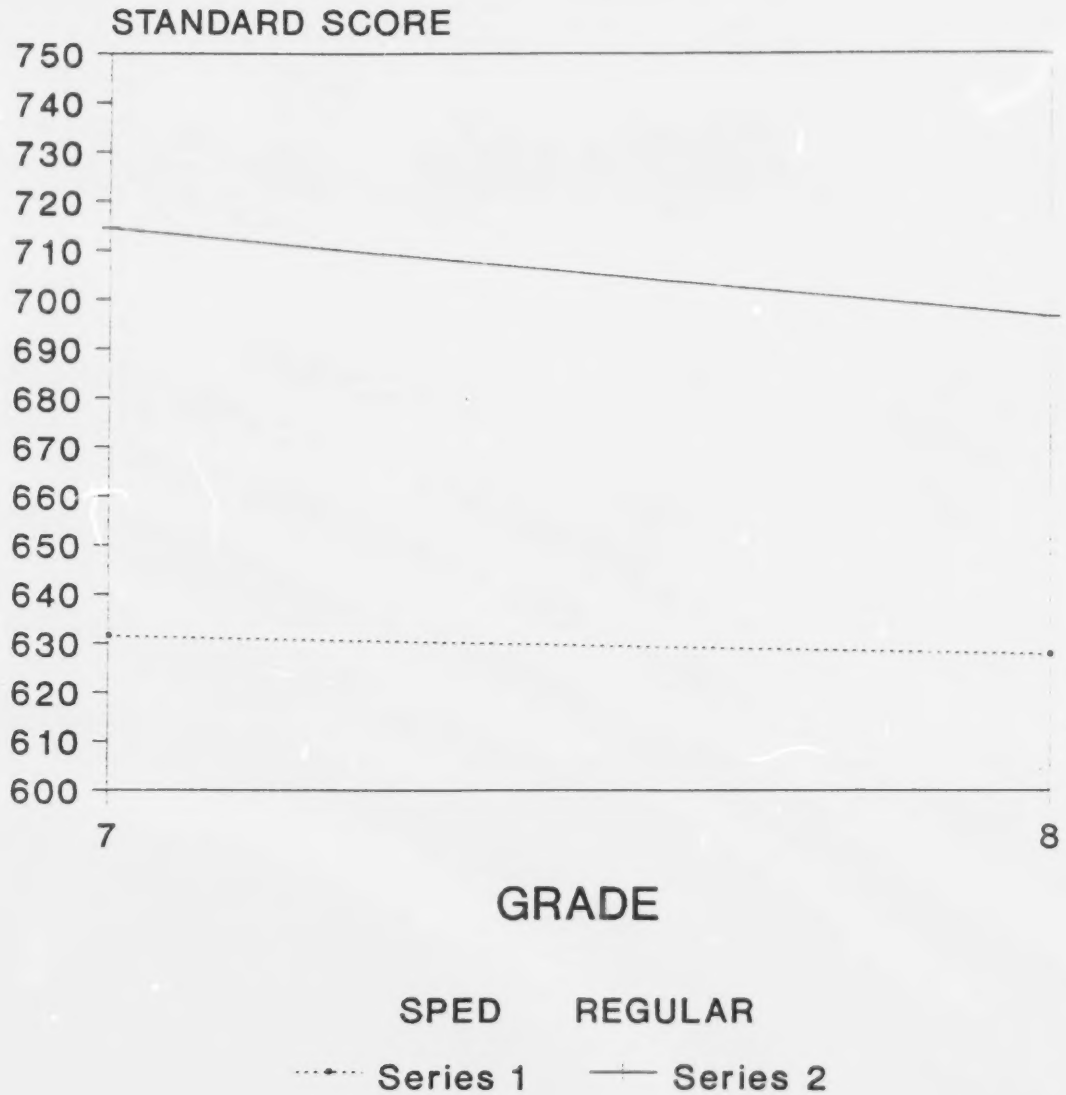
Salvia,J.,& Ysseldyke J.E.,(1991). *Assessment.* Boston: Houghton Mifflin Company.

Appendix A.

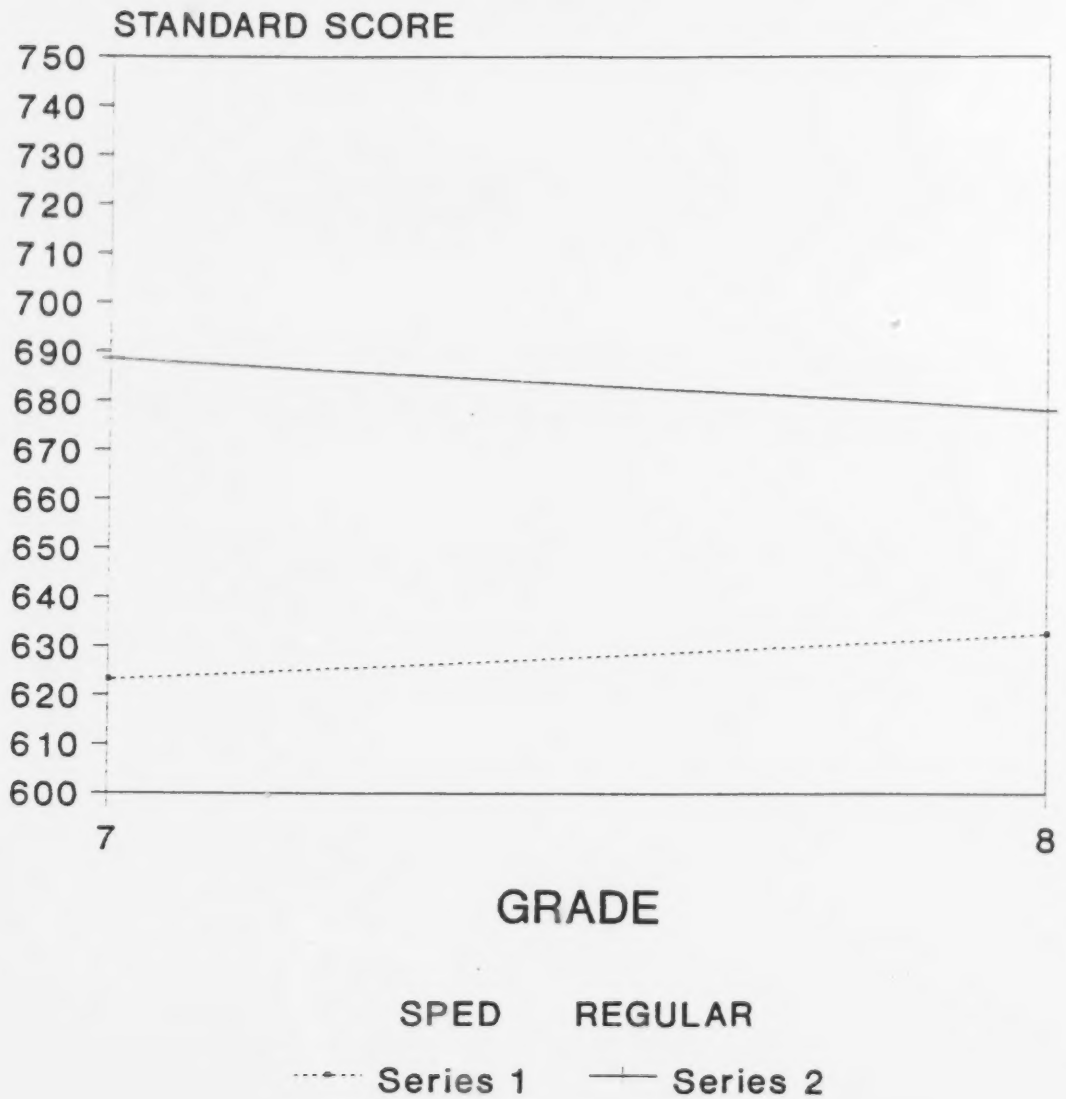
MEAN STANDARD SCORE
READING



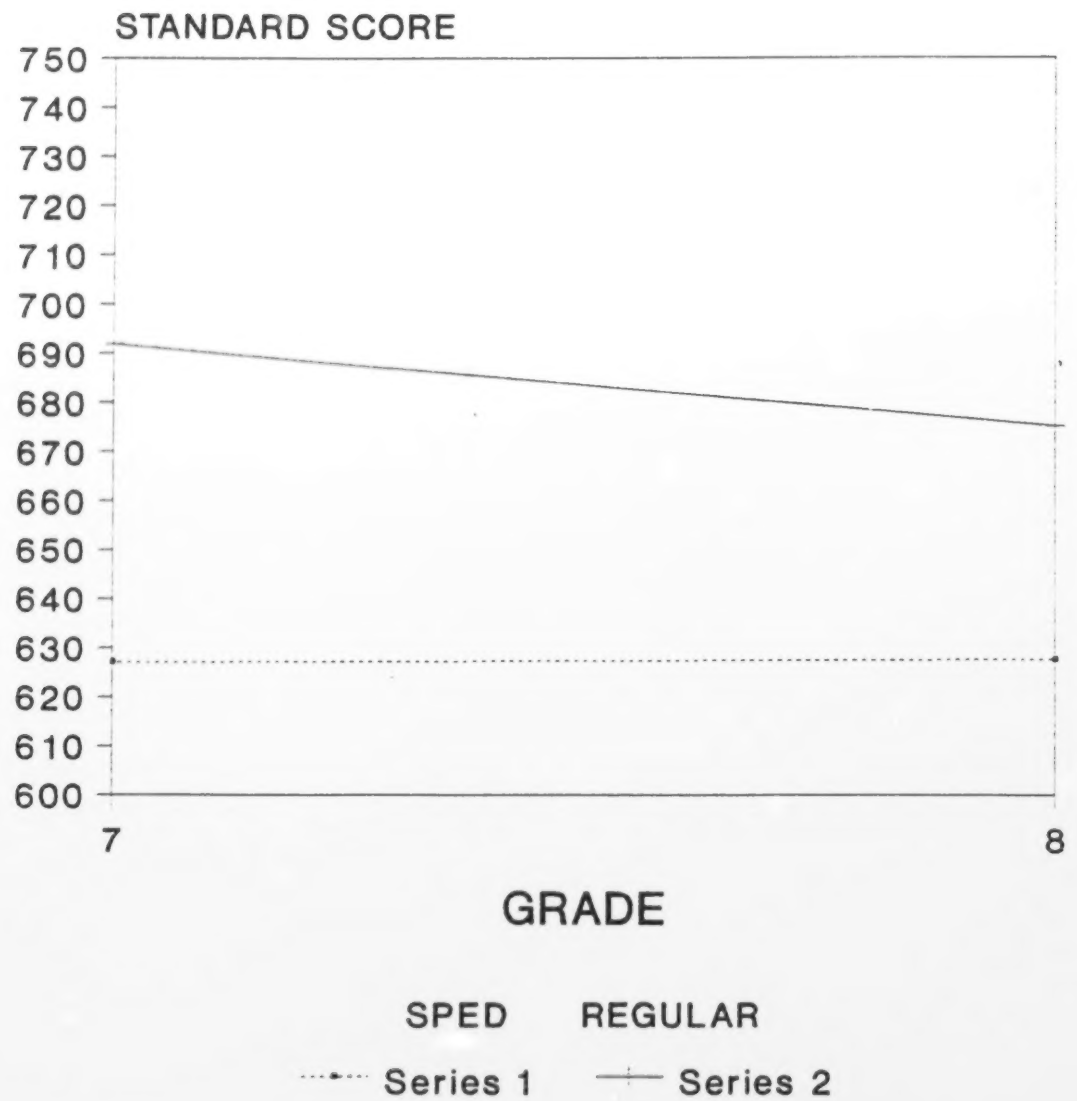
MEAN STANDARD SCORE
MATHEMATICS



MEAN STANDARD SCORE
LANGUAGE



MEAN STANDARD SCORE
BASIC BATTERY



MEAN STANDARD SCORE
COMPLETE BATTERY